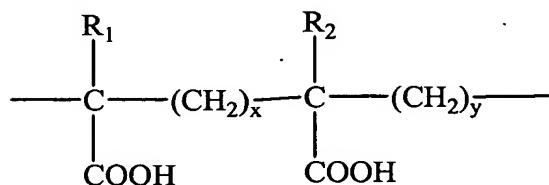


## CLAIMS

1. A method of immunizing an equine host against influenza virus comprising administering a single dose of a vaccine composition comprising at least one recombinant virus, selected from the group consisting of canarypox virus, fowlpox virus and pigeonpox virus, containing and expressing in the equine host at least one nucleic acid molecule encoding at least one heterologous influenza protein; and, as an adjuvant, a polymer having monomeric units of the formula:



in which R<sub>1</sub> and R<sub>2</sub> are identical or different and are H or CH<sub>3</sub>; x is 0 or 1; y is 1 or 2; and x+y=2, or alternatively, as an adjuvant, a polymer of acrylic or methacrylic acid.

2. The method of claim 1 wherein the adjuvant is a polymer of acrylic acid.
3. The method of claim 1 wherein the adjuvant is a polymer of methacrylic acid.
4. The method of claim 1 wherein the adjuvant is a cross-linked polymer of acrylic acid.
5. The method of claim 4 wherein the adjuvant is a carbomer.
6. The method of claim 4 wherein the adjuvant is a polymer of acrylic acid cross-linked with allyl sucrose or with allyl pentaerythritol.
7. The method of claim 1 wherein the recombinant virus is a recombinant canarypox virus.
8. The method of claim 1 wherein the recombinant virus is a recombinant fowlpox virus.
9. The method of claim 1 wherein the recombinant virus is a recombinant pigeonpox virus.
10. The method of claim 1 wherein the equine influenza protein comprises equine influenza HA protein.

11. The method of claim 10 wherein the recombinant virus is a canarypox virus.
  12. The method of claim 1 which comprises two or three recombinant canarypox viruses, each of which contains a nucleic acid molecule that encodes, and each of which expresses, an influenza HA protein from a different influenza strain.
  13. The method of claim 12, wherein at least one recombinant canarypox virus contains a nucleic acid molecule that encodes and expresses an influenza HA protein from Influenza A / equi-2 / Newmarket / 2 / 93.
  14. The method of claim 13, wherein at least a second recombinant canarypox virus contains a nucleic acid molecule that encodes and expresses an influenza HA protein from Influenza A / equi-2 / Kentucky / 94.
  15. A vaccine composition against influenza virus in an equine host comprising at least one recombinant virus, selected from the group consisting of canarypox virus, fowlpox virus and pigeonpox virus, containing and expressing in the equine host at least one nucleic acid molecule encoding at least one heterologous influenza protein; and, as an adjuvant; a polymer having monomeric units of the formula:
- $$\begin{array}{c} R_1 & & R_2 \\ | & & | \\ C & - (CH_2)_x & C \\ | & & | \\ COOH & & COOH \end{array}$$
- in which  $R_1$  and  $R_2$  are identical or different and are H or  $CH_3$ ;  $x$  is 0 or 1;  $y$  is 1 or 2; and  $x+y=2$ , or alternatively, as an adjuvant, a polymer of acrylic or methacrylic acid, wherein a single dose of the composition provides immunity against influenza virus.
16. The vaccine composition of claim 15 wherein the adjuvant is a polymer of acrylic acid.
  17. The vaccine composition of claim 16 wherein the adjuvant is a polymer of methacrylic acid.
  18. The vaccine composition of claim 16 wherein the adjuvant is a cross-linked polymer of acrylic acid.
  19. The vaccine composition of claim 18 wherein the adjuvant is a carbomer.

20. The vaccine composition of claim 18 wherein the adjuvant is a polymer of acrylic acid cross-linked with allyl sucrose or with allyl pentaerythritol.

21. The vaccine composition of claim 15 wherein the recombinant virus is a recombinant canarypox virus.

22. The vaccine composition of claim 15 wherein the recombinant virus is a recombinant fowlpox virus.

23. The vaccine composition of claim 15 wherein the recombinant virus is a recombinant pigeonpox virus.

24. The vaccine composition of claim 15 wherein the equine influenza protein comprises equine influenza HA protein.

25. The vaccine composition of claim 24 wherein the recombinant virus is a canarypox virus.

26. The vaccine composition of claim 15 which comprises two or three recombinant canarypox viruses, each of which contains a nucleic acid molecule that encodes, and each of which expresses, an influenza HA protein from a different influenza strain.

27. The vaccine composition of claim 15 which comprises a recombinant canarypox virus that contains nucleic acid molecules that encode, and that expresses, two or three different influenza HA proteins, each of which is from a different strain of influenza virus.

28. The vaccine composition of claim 26 or 27, wherein at least one recombinant canarypox virus contains a nucleic acid molecule that encodes and expresses an influenza HA protein from Influenza A / equi-2 / Newmarket / 2 / 93.

29. The vaccine composition of claim 26 or 27, wherein at least a second recombinant canarypox virus contains a nucleic acid molecule that encodes and expresses an influenza HA protein from Influenza A / equi-2 / Kentucky / 94.